DESCRIPTION OF SUMMARY TABLES FOR THE NATIONAL INVENTORY OF SOIL AND WATER CONSERVATION NEEDS

BU-166-M

Thomas M. Beetle

May, 1964

Abstract

The information in this paper is supplied for persons having use for estimates of soil and land use conditions in the Northeastern United States. Sample data were collected by the Soil Conservation Service, U. S. D. A., during the years 1957-62, and summaries of estimates of total conditions were printed. The summary tables are described and illustrated here. A brief account of the sampling, coding, and estimation procedures precedes the table descriptions. The latter information is provided as an aid to judging the statistical background for this project.

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DESCRIPTION OF SUMMARY TABLES FOR THE NATIONAL INVENTORY OF SOIL AND WATER CONSERVATION NEEDS

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The primary purpose of this paper is to describe and illustrate the summary tables that have been printed from estimates of soil and land use conditions in twelve Northeastern states and Virginia. However, since some readers may not be familiar with the statistical background for this project, it seems desirable to precede the table descriptions with a brief account of the sampling, coding, and estimation procedures. An immediate aim for this project was to gather information for the Soil and Water Conservation Needs Program, but other uses have been made of the data collected. It is hoped that enough detail is given here to enable the potential user to judge the statistical procedures in an evaluation of the data for his purposes. For further details see references (1) and (2).

The Biometrics Unit, Cornell University, was asked by the Soil Conservation Service, U. S. D. A., to participate jointly with the Service and the Statistical Laboratory, Iowa State University, in planning a sample survey of soil and land use conditions to determine a physical "inventory" of soil and water conservation needs in the United States. The Biometrics Unit was to be responsible for recommending sampling procedures, selecting samples, and processing data for estimates and summarizations for the twelve Northeastern states and Virginia. Mapping, measuring, and recording of data was to be accomplished by the Soil Conservation Service. The basic information required was an estimate of the total acreage per county and per land resource unit of each soil type and soil phase further separated into slope, erosion, and present land use classes.

In the spring of 1956, the Biometrics Unit conducted a pilot study in an attempt to determine the most efficient sample size, rate, and procedure

to be used. Three counties, thought to be "representative" of the Northeastern United States and for which completely measured soil survey data were available, were sampled at various rates and with various sample sizes. Sample acreage of each soil separation was determined by measuring samples plotted on aerial photographs containing soil survey mapping. The sample data were expanded to the total for the county, and these figures were compared with the completely measured soil survey data. It was concluded that most of the sampling should be done at a 2% rate with a sample size of 100 acres. Exceptions to this size and rate are discussed under Sampling below.

Sampling (June, 1956 - January, 1959)

In most cases, county highway maps were stratified into 4900 acre areas. Approximately thirty counties were set up with square strata, and the rest of the counties were stratified within land resource unit boundaries using irregularly shaped strata. Two 100-acre squares, denoted 'a' and 'b', were determined through random selection for each stratum in a county and plotted on the map. These sample plots were then transferred to aerial photographs which were sent to the individual State soil scientists for mapping. The 'a' sample plot in each stratum was mapped, the 'b' sample plot being held for future sampling purposes. These mapped plots constituted, approximately, a 2% sample in each county.

On occasion it seemed desirable to use a larger sample and/or a varied sampling rate. For example, certain forested sections in Maine were sampled with a 400-acre plot at a 0.8% rate. Also, all land resource units in New Jersey had their sampling rates determined by their relative size. Some completely urban counties were entirely omitted from the survey. For individual sampling rates, see Appendix A.

Mapping and Measuring (1956-1959)

Most of the sample plots were mapped by SCS soil scientists during the

above indicated years. Part of the measuring was performed by the individual state SCS offices, and part by the Cartographic Division, SCS, Beltsville, Maryland. The mapping and measuring for the following part or whole counties was accomplished from 1960 to 1962:

New York	Maine
Dutchess	Aroostook (part)
Essex (part)	Franklin (part)
Franklin (part)	Hancock
Greene	Oxford (part)
Hamilton	Piscataquis (part)
Herkimer (part)	Somerset (part)
Jefferson (part)	Washington (part)
Lewis	
Orange	
St. Lawrence (part)	
Sullivan	
Ulster	

Although we now have estimates for the above listed counties, it should be noted in Appendix C that most of the "usual" tables have not yet been printed for them.

Variables Measured

Each sample acre was classified by codes for the variables described below. Subsequent to the original mapping and measuring activity, some codes (as noted below) have been added or revised. Particular attention should be given to whether a variable's code is county or state dependent (the same symbols having different meanings in different counties or states) or whether it is uniform for the entire Northeast. This is especially true when considering the construction of possible tables that will cover areas extending over county or state boundaries. (See Description of Tables.)

State code: Number assigned to each state.

County code: Number assigned to each county within a state.

Sample number: Number assigned to each sample within a county.

Sample size: Number assigned to indicate size of the sample (uniform code).

Ownership: Number assigned to indicate federal or private ownership (uniform code).

Land Resource Unit: Numbers used to code the land resource units appearing on the county highway maps (uniform code).

Land Resource Area: Codes taken directly from the Land Resource Regions and Major Land Resource Areas of the United States map, SCS, U. S. D. A., January, 1963. These codes are uniform for the Northeast, and were added to the data during 1963-64.

Watershed code: These codes were taken from the River Basins Memorandum 4, SCS, U. S. D. A., September 15, 1961. Codes are uniform for the Northeast, and were added to the data during the years 1962-63.

Land Capability Unit: State dependent codes which are presently receiving vast revisions.

State Soil Codes: State dependent number codes assigned to various soil types. Added to the data during 1960-62.

County Soil Codes: County dependent codes assigned to various soil types.

Slope: State dependent letter code designating different degree classes of slope.

Erosion: State dependent code designating various erosion condition classes.

Land Use: Number assigned to indicate whether the sample acre was in cropland, pasture, forest, other, or urban (uniform code).

See reference (1) for more detail on these codes.

Data Processing and Estimation (1958-1962)

The total acreage in a sample for each combination of the above variables was punched into a standard 80-column IBM card along with the codes identifying its associated variables. Also, an expansion ratio (next paragraph) was punched into the card. We refer to these cards as data cards.

The expansion ratio used for estimating total acres in each combination of variables in a county was computed using an adjusted 1954 census total acreage for the county. The census acreage figure, which excludes water bodies over 40 acres in size, was adjusted by subtracting the federally owned

non-cropland acreage. Also, in some counties (see Appendix C), the total urban and/or water acreage was subtracted from the census figure. The expansion ratio was computed by dividing the adjusted census acreage by the total sample acreage less water and urban sample acreage where appropriate. Some counties had a single ratio, and some counties had a different ratio for each land resource unit.

Data cards for each county were computer-processed multiplying sample acreage by expansion ratio and combining the information on all cards in a particular combination of variables. Computer output was in the form of a set of answer cards containing the estimates. The variable codes identified on these cards are:

State code
County code
Land Resource Unit
Land Resource Area
Watershed code
Land Capability Unit
State Soil Code
County Soil Code
Slope class
Erosion class

Each detected combination of the above variables appeared on a single answer card along with the estimated acreage in each land use and the total estimated acreage. These cards were used for printing the summary tables described below.

Prior to the sample survey, certain counties in the Northeastern states had been completely mapped and measured. In most cases these counties were not sampled, but, instead, the completely measured data were punched on answer cards. The tables for these counties are denoted with 'M' in Appendix C.

The precision of the estimates obtained from a 2% sample is indicated in the following statement:

For the purpose of the Conservation Needs Inventory, the particular breakdown of interest is a classification of the land area of the county into land capability units subdivided by land use. There will be less variability found amongst these units than amongst the individual soils, since each unit is a combination of different soils found on various slopes and subjected to various erosion classifications. Similarly, a land capability unit will occupy a greater percentage of the land area than the individual soil separations composing the unit. Hence, it should be expected that more precise estimates will be available for these units than the individual soils. Since some land capability units occupy more area of a county than others, it also follows that the precision will vary with the size of the land capability unit.

In counties smaller than average (say less than 400,000 acres), the same rate of sampling as used in counties of average size or larger will not produce results of the same precision. This is due to the fact that the variation in soils decreases less rapidly than does the size of land area.

The following table is indicative of precision obtainable with a 2% sample. These results were obtained for land capability units subdivided by land use in Tioga and Ontario Counties, New York. The area of these counties is close to average size.

Relationship Between Percentage of County Occupied by a Land Capability Unit for a Particular Land Use and the Relative Standard Error Associated with that Unit using a 2% Sampling Rate

Percent of County Occupied	Relative Standard Error (%)
0 - 1	61
1 - 2	34
2 - 4	24
4 - 6	20
6 - 8	17
8 - 10	15
10 - 12	12
12 and over	10

Thus if we estimate a certain capability unit under a certain land use to occupy 5% of the county or 20,000 acres, the standard error attached to our estimate will be 20% or 4,000 acres. We can then say the odds are 2 to 1 that the actual acreage of this particular breakdown lies somewhere between 16,000 and 24,000 acres.[1]

Higher (or lower) sampling rates would be expected to yield more (or less) precise estimates.

[1] Statement by J. E. Dowd, March, 1957, based on pilot study information.

Description of Tables (existing and possible)

The best way to visualize the forms of the tables and the information they contain is to refer to the illustrations given in Appendix B. For example, the total estimated acres in each land use (cropland, pasture, forest, other, and urban) in each soil type-slope-erosion combination in a county (or a state) are printed in the form shown on page B-1. Appendix C indicates which of the tables shown in Appendix B have been printed for each county, state, or "specifically designated area" (see below).

Some tables for specifically designated areas which cross county and state borders have been printed. In 1959 the Agricultural Research Service, U. S. D. A., requested tables for Physio-Economic Regions and Economic Areas in the Potomac River Watershed as defined by U. S. D. A. Area names and tables printed are listed in Appendix C. In 1964 tables for the White River Soil and Water Conservation District, covering parts of four counties in Vermont, were printed.

There is no special difficulty in printing tables for land resource units, major land resource areas, and watersheds within a state; but crossing state borders requires (in some instances) constructing new codes. Soil codes, for example, vary from state to state, and printing a soil type-slope-erosion table (p. B-1) for a major land resource area that crosses state borders would involve constructing a uniform soil code for the area. This problem occurred in the Potomac River Watershed study. Land capability unit, slope, and erosion codes are also dependent upon the state. Land resource unit, land resource area, and watershed codes are uniform for the Northeastern states. (See description of variables under Variables Measured.)

On occasion, as in the Potomac River Watershed study and the White River Soil and Water Conservation District study mentioned above, tables are requested for areas which are not designated by any unique set of code

symbols. In this case, it is necessary to determine which samples fall in the area and to acquire a new set of estimates for those samples by computer processing.

The Soil Conservation Service is currently considering the merits of changing from IBM card to magnetic tape procedures. If this change is made, the listing of data cards on tape will include the "Sample acreage x Expansion ratio" product. Such a step would allow the printing, directly from the data tape, of summary tables for specific groups of samples which are not uniquely classified by some codes on the answer cards, and would not require the additional computer processing discussed in the previous paragraph. However, when crossing state boundaries it will still be necessary to construct uniform codes.

All copies of the tables described here are being used by the Soil Conservation Service or other agencies. No copies are available for immediate distribution. Requests for a printing of copies of tables from persons outside the Soil Conservation Service should be sent to:

Mr. T. A. Neubauer
Soil Conservationist
Resource Development Division
U. S. D. A., Soil Conservation Service
Washington 25, D. C.

Soil Conservation Service personnel should write directly to the Biometrics Unit.

The cost of copies of the tables includes materials, machine programming, machine rentals, and machine operator salaries. In general, the more tables of one type requested, the less the cost per table; since one program and one printing operation would be required regardless of the number of counties or states involved.

References:

(1) Administrators Memorandum SCS-127, Soil Conservation Service, U. S. D. A., June 4, 1957.

(2) Agriculture Information Bulletin 263, U. S. D. A., May, 1962.

(3) Twelfth Annual Report, Biometrics Unit, Plant Breeding Department, Cornell University; pp. 18-21.

(4) Thirteenth Annual Report, Biometrics Unit, Plant Breeding Department, Cornell University; pp. 20-21.

(5) Fourteenth Annual Report, Biometrics Unit, Plant Breeding Department, Cornell University; pp. 21-22.

(6) Fifteenth Annual Report, Biometrics Unit, Plant Breeding Department, Cornell University; pp. 20-21.

(7) Cassady, Janet and Dowd, J. E., Sampling Procedures for the National Inventory of Soil and Water Conservation Needs, BU-86-M, June, 1957.

(8) Dowd, J. E., A Study for the Selection of a Sample Survey to Determine Soil Conservation Needs, Biometrics Unit, May, 1956. (First draft.)

(9) Dowd, J. E., Area Sampling for Soil Conservation Needs, BU-77-M, July, 1956.

(10) Dowd, J. E. and Cassady, J. C., Estimation Procedures for the National Inventory of Soil and Water Conservation Needs, BU-88-M, August, 1957. (To be revised.)

APPENDIX A

Sampling Rates in the Northeastern States for the Soil and Water Conservation Needs Inventory

Sampling Rates

Connecticut - All sampled areas were sampled at a 2% rate.

Delaware - All sampled areas were sampled at a 2% rate.

Maine - All sampled areas were sampled at a 2% rate except:

Aroostook	LRU B3b	.8%
Franklin	LRU B3a	.8%
Hancock	LRU B3a	.8%
	" B3b	.8%
Oxford	LRU B3a	.8%
Penobscot	LRU B3a	.8%
	" B3b	.8%
Piscataquis	LRU B3a	.8%
	" B3b	.8%
Somerset	LRU B3a	.8%
	" B3b	.8%
Washington	LRU B3a	.8%
	" B3b	.8%

Maryland - All sampled areas were sampled at a 2% rate.

Massachusetts - All sampled areas were sampled at a 2% rate except:

Middlesex	SuAsCo watershed	4%
Worcester	SuAsCo watershed	4%

New Hampshire - All sampled areas were sampled at a 2% rate except:

Carroll	LRU B3a	.5%
Coos	LRU B3a	.5%
Grafton	LRU B3a	.5%

New Jersey - The sampling rate for each LRU in the State was as follows:

N1	8%
N2	20%
N3	6%
N4	2.75%
N5	6.5%
N6	7.25%
N7	34%
N8	1.125%
N9	not sampled
N10	1.75%
NS1	2%
NS2	(combined with N6)
S6	5%
S8	10%
S9	5.25%
S9a	2.75%
S9a1	4%
S10a	32%
S10b1	21%
S10b2	30%
S10b	10%
S10cg	4%
S10dhj and S10j	5.5%
S10j1	(combined with SH)
S10j2 and S10j3	5%
S10e	16%
S10f	24%
SH	5%
H1a	4.2%
H1b	7.75%
H1d	20%
H1e	12%
H2	9%
H3	17%
H4	5.5%
H5	19%
O1	1.5%
O4	.6%
O1-5 and O2-4	.75%
CT	4%
CT1	12%
TM	not sampled
CTU	(urban) - not sampled

New York - All sampled areas were sampled at a 2% rate except:

Cattaraugus	Allegany State Park Area	.5%
Clinton	LRU B3b1	.5%
Essex	LRU B3b1	.5%
Franklin	LRU B3b1	.5%
Fulton	Adirondack State Park Area	.5%
Herkimer	LRU B3b1	.5%
Jefferson	LRU B6b1 and B7a3	1%
	LRU B3b3, B6b5, B6b6, B7a4, B8a1, B7b4, and B8a2	.5%
Lewis	LRU B8a1	.5%
Oneida	Adirondack State Park Area	.5%
Oswego	LRU B8a1 and B8a2	.5%
Rensselaer	LRU B9a3	.5%
St. Lawrence	LRU B6b2, B6b3, B6b5, B6b6, and part of B6b1	1%
	LRU B3b1, B3b2, B6b4, and part of B6b1	.5%
Saratoga	LRU B3b1	.5%
Suffolk		1%
Warren		.5%
Washington	LRU B3b1	.5%

Pennsylvania - All sampled areas were sampled at a 2% rate.

Rhode Island - All sampled areas were sampled at a 2% rate except:

Bristol	LRU B2f3	4%
Kent	LRU B2e1, B2e3, and B2f1	4%
Newport	LRU B2b6, B2f1, and B2f3	4%

Vermont - All sampled areas were sampled at a 2% rate except:

Caledonia	LRU B3a	.5%
Essex	LRU B3a	.5%
Orleans	LRU B3a	1%

Virginia - All sampled areas were sampled at a 2% rate.

West Virginia - All sampled areas were sampled at a 2% rate except:

Boone	1%	Mingo	1%
Logan	1%	Wyoming	1%
McDowell	1%		

APPENDIX B

Illustrations of Tables Printed for the Soil and Water Conservation Needs Inventory

(Northeastern States and Virginia)

Table 1: Estimated Acreage in each Land Use in _____ County, _____ (or State of _____), by Soil-Slope-Erosion Combination.

St.-Co.	LCU	Soil Code State	Soil Code County	Slope	Eros.	Cropland	Pasture	Forest	Other	Urban	Total
47-51		818	1	A	1			94			94
47-51		818	2	A	1			10,138	71		10,209
47-51		198	4	A	1			178			178
47-51		834	5	C	1			125			125
. . . . .											
47-51		586	99	A	1			560			560
47-51		833	GP	Z					318		318
47-51	SUBTOTAL					31,456	4,823	123,534	16,468		176,280
47-51	WATER										375
47-51	GRAND TOTAL										176,655

Table 2: Estimated Acreage in each Land Use in _____ County, _____ (or State of _____), by Land Capability Unit Classification.

St.-Co.	LCU	Soil Code State County	Slope	Eros.	Cropland	Pasture	Forest	Other	Urban	Total
32-03	1 3				3,372	235	1,460	145		5,209
32-03	2E 3				10,485	2,411	10,670	983		24,551
32-03	2E 5				260	1,521		431		2,213
. . . . .										
32-03	7S 2					145	5,972			7,154
32-03	9					179			11,409	11,588
32-03	SUBTOTAL				95,076	64,703	226,792	49,284	11,409	447,264
32-03	WATER									5,021
32-03	GRAND TOTAL									452,285

Table 3: Estimated Acreage in each Land Use in _____ County, _____ (or State of _____), by Slope-Erosion Combination.

St.-Co.	LCU	Soil Code State County	Slope	Eros.	Cropland	Pasture	Forest	Other	Urban	Total
32-45			A	1	27,620	18,155	31,100	12,214		89,083
32-45			A	2	12,909	3,009	224	1,130		17,274
32-45			A	Q4	282		845			1,127
32-45			A	Q5	151					151
. . .										
32-45			EF	2	47	47				94
32-45			EK	3				151		151
32-45	SUBTOTAL				323,935	160,590	304,729	100,246	9,851	899,349
32-45	WATER									1,778
32-45	GRAND TOTAL									901,127

Table 4: Estimated Acreage in each Land Use in each Land Resource Unit in _____ County, _____ (or State of _____), by Land Capability Unit Classification.

St.-Co.	LCU	Soil Code State	Soil Code County	Slope	Eros.	Cropland	Pasture	Forest	Other	Urban	Total
21-05	1	5				104	155	52		52	363
21-05	2E	3				155		52		104	311
21-05	2E	5				1,140		2,124	311	621	4,196
. . . . .											
SUBTOTAL, LAND RESOURCE UNIT B2b2						4,044	2,642	28,546	30,460	6,166	71,850
21-05	1	3				300		100		200	599
21-05	1	5							250		250
21-05	2E	2				1,198		849		200	2,247
. . . . .											
SUBTOTAL, LAND RESOURCE UNIT B2e1						10,037	1,500	52,578	1,950	18,776	84,837
. . . . .											
21-05	2S	5								315	315
21-05	3S	7						135		135	270
21-05	6S	3								719	719
. . . . .											
21-05	8W	1							988	180	1,168
21-05	9							180	135	13,165	13,479
SUBTOTAL, LAND RESOURCE UNIT B2b5								9,885	2,157	16,312	28,351
21-05	SUBTOTAL					28,635	8,055	173,085	41,708	67,642	319,125
21-05	WATER										872
21-05	GRAND TOTAL										319,997

Table 5: Estimated Acreage in each Land Use in each Land Resource Unit in _____ County, _____ (or State of _____), by Slope-Erosion Combination.

St.-Co.	LCU	Soil Code State County	Slope	Eros.	Cropland	Pasture	Forest	Other	Urban	Total
47-51			A	1	1,595	188	25,657	94		27,534
47-51			B	1	469	516	18,666	1,126		20,777
47-51			B	2	5,770	1,736	4,503	282		12,287
. . . . .										
47-51			F	4		235				235
SUBTOTAL, LAND RESOURCE UNIT A1e1					8,960	3,379	74,343	2,065		88,742
47-51			A	1	102		560			662
47-51			B	1	2,190		1,884			4,074
47-51			D	2	51		306			357
SUBTOTAL, LAND RESOURCE UNIT A1e4					2,343		2,750			5,093
. . . . .										
47-51			A	1	8,878	427	4,242	142		13,690
47-51			B	1	285		214			500
47-51			B	2	1,533	142	71			1,747
. . . . .										
47-51			E	1			463	107		570
47-51			F	1	36			107		143
SUBTOTAL, LAND RESOURCE UNIT B10b45					11,052	569	5,845	356		17,826
47-51	SUBTOTAL				31,456	4,823	123,534	16,468		176,280
47-51	WATER									375
47-51	GRAND TOTAL									176,655

Table 6: Estimated Acreage in each Land Use in each Land Capability Unit in _____ County, _____ (or State of _____), by Soil-Slope-Erosion Combination.

St.-Co.	LCU	Soil Code State	Soil Code County	Slope	Eros.	Cropland	Pasture	Forest	Other	Urban	Total
20-02	1 4	785	601	A	0				1,413		1,413
20-02	1 4	234	742	A	1		40	40			80
SUBTOTAL, LAND CAPABILITY UNIT							40	40	1,413		1,493
20-02	1 5	502	103	A	1			92			92
20-02	1 5	510	104	A	1				96		96
20-02	1 5	107	323	A	1	108	54				162
SUBTOTAL, LAND CAPABILITY UNIT						108	54	92	96		350
20-02	1 28	562	254	A	1				353		353
20-02	1 28	374	373	A	1	162					162
SUBTOTAL, LAND CAPABILITY UNIT						162			353		515
. . . . .											
20-02	9	UR	UR	Z						31,478	31,478
SUBTOTAL, LAND CAPABILITY UNIT										31,478	31,478
20-02	SUBTOTAL					65,471	10,624	119,500	21,111	31,478	248,184
20-02	WATER										1,830
20-02	GRAND TOTAL										250,014

Table 7: Estimated Acreage in each Land Use in each Land Resource Unit in _____ County, _____ (or State of _____), by Soil-Slope-Erosion Combination.

St.-Co.	LCU	Soil Code State	Soil Code County	Slope	Eros.	Cropland	Pasture	Forest	Other	Urban	Total
21-05		121	7	B	2	104	311	414	52	570	1,450
21-05		122	8	BC	1	52	311	2,486	622	363	3,834
21-05		123	9	BC	1			2,279			2,279
. . . . .											
SUBTOTAL, LAND RESOURCE UNIT B2b2						4,044	2,642	28,546	30,460	6,166	71,850
21-05		121	7	B	2	200		50	50		300
21-05		122	8	BC	1			1,198		50	1,248
21-05		123	9	BC	1			50			50
. . . . .											
SUBTOTAL, LAND RESOURCE UNIT B2e1						10,037	1,500	52,578	1,950	18,776	84,837
. . . . .											
21-05		121	7	B	2					315	315
21-05		122	8	BC	1					719	719
21-05		122	8	DE	1					225	225
. . . . .											
21-05		4	56	B	1					90	90
21-05		UR	UR	Z						10,963	10,963
SUBTOTAL, LAND RESOURCE UNIT B2b5								9,885	2,157	16,312	28,351
21-05	SUBTOTAL					28,635	8,055	173,085	41,708	67,642	319,125
21-05	WATER										872
21-05	GRAND TOTAL										319,997

Table 8: Estimated Acreage in each Land Use in each Land Capability Unit in each Land Resource Unit in _____ County, _____ (or State of _____), by Soil-Slope-Erosion Combination.

St.-Co.	LCU	Soil Code State	Soil Code County	Slope	Eros.	Cropland	Pasture	Forest	Other	Urban	Total
20-02	1 4	785	601	A	0				1,413		1,413
SUBTOTAL, LAND CAPABILITY UNIT									1,413		1,413
20-02	1 28	562	254	A	1				353		353
SUBTOTAL, LAND CAPABILITY UNIT									353		353
. . . . .											
20-02	9	UR	UR	Z						6,360	6,360
SUBTOTAL, LAND CAPABILITY UNIT										6,360	6,360
SUBTOTAL, LAND RESOURCE UNIT A1b1						619		7,685	3,355	6,360	18,019
20-02	1 5	502	103	A	1			38			38
SUBTOTAL, LAND CAPABILITY UNIT								38			38
20-02	2E 4	59	151	B	2			539			539
SUBTOTAL, LAND CAPABILITY UNIT								539			539
. . . . .											
20-02	9	UR	UR	Z						4,080	4,080
SUBTOTAL, LAND CAPABILITY UNIT										4,080	4,080
SUBTOTAL, LAND RESOURCE UNIT A1d1						2,954		15,653	1,459	4,080	24,159
. . . . .											
20-02	9	UR	UR	Z						40	40
SUBTOTAL, LAND CAPABILITY UNIT										40	40
SUBTOTAL, LAND RESOURCE UNIT A2b4						8,133	719	2,396	1,621	40	12,908
20-02 SUBTOTAL						65,471	10,624	119,500	21,111	31,478	248,184
20-02 WATER											1,830
20-02 GRAND TOTAL											250,014

Table 9: Estimated Acreage in each Land Use in the State of _____, by Land Capability Sub-Class.

St.-Co.	LCU	Soil Code State	Soil Code County	Slope	Eros.	Cropland	Pasture	Forest	Other	Urban	Total
7	1					18,965	2,215	9,573	7,310	4,046	42,107
7	2E					99,183	23,748	59,664	50,796	17,903	251,296
7	2S					33,487	7,541	33,365	19,707	5,164	99,264
7	2W					78,758	22,745	40,086	28,039	8,699	178,323
7	3E					38,102	12,532	33,675	17,606	3,059	104,974
. . . . .											
7	8W					225	918	63,723	18,206	564	83,635
7	9							1,411	11,648	214,532	227,590
7	SUBTOTAL					355,037	194,545	1,935,132	321,535	297,849	3,104,098
7	WATER										32,037
7	GRAND TOTAL										3,136,135

Table 10: Estimated Acreage in each Land Use in each Land Resource Area, by Land Capability Unit and Land Capability Subclass for _____ County, _____.

St.-Co.	LCU	Soil Code State County	Slope	Eros.	Cropland	Pasture	Forest	Other	Urban	Total
46-01	1	6			63	63				126
SUBTOTAL, LCU SUBCLASS	1				63	63				126
46-01	2S	7					682			682
SUBTOTAL, LCU SUBCLASS	2S						682			682
46-01	2W	67			63		63	158		284
SUBTOTAL, LCU SUBCLASS	2W				63		63	158		284
. . . . .										
46-01	9							32		32
SUBTOTAL, LCU SUBCLASS	9							32		32
SUBTOTAL, LAND RESOURCE AREA	114				2,118	3,409	102,539	2,968		111,034
46-01	1	3			632	180				813
46-01	1	9			677	135				813
SUBTOTAL, LCU SUBCLASS	1				1,309	315				1,626
. . . . .										
46-01	7S	237A					171			171
46-01	7S	237B			171		5,210			5,380
46-01	7S	237E					1,794			1,794
SUBTOTAL, LCU SUBCLASS	7S				171		7,175			7,345
SUBTOTAL, LAND RESOURCE AREA	116				1,111		7,430			8,540
46-01	SUBTOTAL				128,476	113,930	167,557	11,662	496	422,134
46-01	WATER									1,874
46-01	GRAND TOTAL									424,008

Table 11: Estimated Acreage in each Land Use in each Land Resource Area in each Watershed, by Land Capability Unit and Land Capability Subclass for _____ County, _____.

St.-Co.	LCU	Soil Code State	Soil Code County	Slope	Eros.	Cropland	Pasture	Forest	Other	Urban	Total
46-02	1	1				1,131	113				1,244
SUBTOTAL, LCU SUBCLASS 1						1,131	113				1,244
46-02	2E	3						134			134
SUBTOTAL, LCU SUBCLASS 2E								134			134
46-02	2S	7					57		678		735
SUBTOTAL, LCU SUBCLASS 2S							57		678		735
. . . . .											
46-02	9								314		314
SUBTOTAL, LCU SUBCLASS 9									314		314
SUBTOTAL, LAND RESOURCE AREA 114						1,980	1,414	64,724	4,198		72,318
SUBTOTAL, WATERSHED 011000						1,980	1,414	64,724	4,198		72,318
. . . . .											
46-02	7W	1					58				58
SUBTOTAL, LCU SUBCLASS 7W							58				58
SUBTOTAL, LAND RESOURCE AREA 116						523	4,947	18,078	58		23,604
SUBTOTAL, WATERSHED 040110						523	4,947	18,078	58		23,604
46-02	SUBTOTAL					36,262	23,781	287,332	13,741	5,784	366,905
46-02	WATER										1,154
46-02	GRAND TOTAL										368,059

Table 12: Estimated Acreage in each Land Use within each Soil Type within each Land Capability Unit within each Land Resource Unit within each Watershed in _____ County, _____.

St.-Co.	LCU	Soil Code State County	Slope	Eros.	Cropland	Pasture	Forest	Other	Urban	Total
47-11	2E 1V	699			125					125
SUBTOTAL,	LAND CAPABILITY UNIT 2E 1V				125					125
47-11	2E 3V	398			1,564					1,564
SUBTOTAL,	LAND CAPABILITY UNIT 2E 3V				1,564					1,564
47-11	2W 1V	645				313				313
SUBTOTAL,	LAND CAPABILITY UNIT 2W 1V					313				313
. . . . .										
47-11	7S 4V	838			63	125	1,126			1,313
SUBTOTAL,	LAND CAPABILITY UNIT 7S 4V				63	125	1,126			1,313
SUBTOTAL,	LAND RESOURCE UNIT B14a1				13,949	11,947	24,141			50,035
. . . . .										
SUBTOTAL,	LAND RESOURCE UNIT B14a4				4,091	7,850	87,549			99,488
. . . . .										
SUBTOTAL,	LAND RESOURCE UNIT B14g2				896	395	16,644			17,936
SUBTOTAL,	WATERSHED 070710				21,635	22,373	132,996			177,002
. . . . .										
47-11	7S 4V	838				55				55
SUBTOTAL,	LAND CAPABILITY UNIT 7S 4V					55				55
SUBTOTAL,	LAND RESOURCE UNIT B14a4					4,200	6,853			11,054
SUBTOTAL,	WATERSHED 080210				4,630	21,150	10,293			36,071
47-11	GRAND TOTAL				26,265	43,523	143,289			213,073

APPENDIX C

Counties, States and Areas Having Tables Illustrated in Appendix B.

APPENDIX C

Legend

X : Estimates are for the whole county, state or area less federally owned non-cropland and (in some cases) roads and recent inundations.

P : Estimates are for part of the county, state or area. I.e., certain land resource units or other areas have been excluded.

M : Tabulation of completely measured data.

Y : Water (or urban) estimates included in the tables.

0 : Water (or urban) was estimated to be zero acres.

(N) : This symbol, after a county name, indicates that no data are available.

- : No table printed.

*, ** : Footnotes at the end of the first table in Appendix C.

Counties, States and Areas Having Tables Illustrated in Appendix B

Name	Table Number												Urban Est.	Water Est.
	1	2	3	4	5	6	7	8	9	10	11	12		
Connecticut	X	X	X	X	X	-	X	-	X	-	-	-	Y	Y
Fairfield	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Hartford	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Litchfield	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Middlesex	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
New Haven	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
New London	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Tolland	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Windham	X	X	X	-	-	-	-	-	-	X	X	-	O	Y
Delaware	X	X	X	X	X	-	X	-	X	-	-	-	Y	Y
Kent	-	-	X	-	-	X	-	X	-	-	-	-	Y	Y
Newcastle	-	-	X	-	-	X	-	X	-	-	-	-	Y	Y
Sussex	-	-	X	-	-	X	-	X	-	-	-	-	Y	Y
Maine	-	-	-	-	-	-	-	-	P	-	-	-	-	-
Androscoggin	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Aroostook	P	P	P	-	-	-	-	-	-	P	P	-	Y	Y
SCD #1	X	X	X	X	-	-	-	-	-	-	-	-	Y	Y
SCD #2*	X	X	X	X	-	-	-	-	-	-	-	-	Y	Y
SCD #3	X	X	X	X	-	-	-	-	-	-	-	-	Y	Y
Outside SCD	P	P	P	P	-	-	-	-	-	-	-	-	O	O
Cumberland	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Franklin	P	P	P	P	-	-	-	-	-	X	X	-	O	Y
Hancock	-	-	-	-	-	-	-	-	-	X	X	-	Y	Y
Kennebec	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Knox	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Lincoln	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Oxford	P	P	P	P	-	-	-	-	-	X	X	-	Y	Y
Penobscot	-	-	X	X	-	-	-	-	-	X	X	-	Y	Y
SCD #3	X	X	-	-	-	-	-	-	-	-	-	-	O	Y
SCD #7	X	X	-	-	-	-	-	-	-	-	-	-	Y	Y
Piscataquis	P	P	P	P	-	-	-	-	-	X	X	-	O	Y
Sagadahoc	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Somerset	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Waldo	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Washington	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
York	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Maryland	P	P	P	P	P	-	P	-	P	-	-	-	P	P
Allegany	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Anne Arundel	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Baltimore	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Baltimore City (N)														
Calvert	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Caroline	X	X	X	-	-	X	-	X	-	X	X	-	Y	Y
Carroll	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Cecil	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Charles	-	-	X	-	-	X	-	X	-	X	X	-	Y	O
Dorchester	P	-	P	-	-	P	-	P	-	P	P	-	O	P

(continued)

Name	Table Number 1	2	3	4	5	6	7	8	9	10	11	12	Urban Est.	Water Est.
Frederick	-	-	-	-	-	-	-	-	-	X	X	-	Y	Y
SCD #1	-	-	X	-	-	X	-	X	-	-	-	-	O	Y
SCD #2	-	-	X	-	-	X	-	X	-	-	-	-	Y	Y
Garrett	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Harford	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Howard	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Kent	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Montgomery	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Prince George's	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Queen Anne's	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
St. Mary's	-	-	X	-	-	X	-	X	-	X	X	-	Y	O
Somerset	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Talbot	-	-	X	-	-	X	-	X	-	X	X	-	Y	O
Washington	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Wicomico	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Worcester	-	-	X	-	-	X	-	X	-	X	X	-	Y	Y
Massachusetts	P	P	P	P	P	-	P	-	P	-	-	-	Y	Y
Barnstable	X	X	X	X	-	-	X	-	-	X	X	-	Y	Y
Berkshire	P	P	P	P	-	-	P	-	-	P	P	-	P	P
Bristol	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Dukes	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Essex	X	X	X	X	-	-	X	-	-	X	X	-	Y	Y
Franklin	X	X	X	X	-	-	X	-	-	X	X	-	Y	Y
Hampden	X	X	X	X	-	-	X	-	-	X	X	-	Y	Y
Hampshire	X	X	X	X	-	-	X	-	-	X	X	-	Y	Y
Middlesex	X	X	X	X	-	-	X	-	-	X	X	-	Y	Y
Nantucket	X	X	X	-	-	-	-	-	-	X	X	-	O	O
Norfolk	X	X	X	X	-	-	X	-	-	X	X	-	Y	Y
Plymouth	X	X	X	X	-	-	X	-	-	X	X	-	Y	Y
Suffolk (N) - Census acreage of 35,200 acres Urban was included in State Summaries														
Worcester	X	X	X	X	-	-	X	-	-	X	X	-	Y	Y
New Hampshire	X	X	X	X	X	-	X	-	X	-	-	-	Y	Y
Belknap	X	X	X	X	-	-	-	-	-	X	X	-	Y	O
Carroll	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Cheshire	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Coos	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Grafton	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Hillsborough	X	X	X	X	-	-	-	X	-	X	X	-	Y	Y
Merrimack	-	X	-	X	-	-	-	X	-	X	X	-	Y	Y
Rockingham	X	X	X	X	-	-	-	X	-	X	X	-	Y	Y
Strafford	X	X	X	X	-	-	-	X	-	X	X	-	Y	Y
Sullivan	X	X	X	-	-	-	-	-	-	X	X	-	Y	O
New Jersey	P	P	P	P	P	-	P	-	P	-	-	-	P	P
Atlantic **	-	-	-	-	-	P	-	P	-	-	-	-	P	Y
Bergen (N)														
Burlington**	-	-	-	-	-	P	-	P	-	-	-	-	P	Y
Camden **	-	-	-	-	-	X	-	X	-	-	-	-	P	Y
Cape May **	-	-	-	-	-	P	-	-	-	-	-	-	Y	Y

(continued)

Name	Table Number 1	2	3	4	5	6	7	8	9	10	11	12	Urban Est.	Water Est.
Cumberland**	-	-	-	-	-	P	-	P	-	-	-	-	Y	Y
Essex (N)														
Gloucester**	-	-	-	-	-	X	-	X	-	-	-	-	P	Y
Hudson (N)														
Hunterdon	-	-	X	-	-	X	-	X	-	-	-	-	Y	Y
Mercer	-	-	X	-	-	X	-	X	-	-	-	-	P	Y
Middlesex	-	-	X	-	-	X	-	X	-	-	-	-	P	Y
Monmouth **	-	-	-	-	-	X	-	X	-	-	-	-	P	Y
Morris	-	-	X	-	-	X	-	X	-	-	-	-	Y	Y
Ocean**	-	-	-	-	-	P	-	P	-	-	-	-	P	Y
Passaic (N)														
Salem**	-	-	-	-	-	P	-	P	-	-	-	-	Y	Y
Somerset	-	-	X	-	-	X	-	X	-	-	-	-	P	Y
Sussex	-	-	X	-	-	X	-	X	-	-	-	-	P	Y
Union (N)														
Warren	-	-	X	-	-	X	-	X	-	-	-	-	P	Y
New York	-	-	-	-	-	-	-	-	P	-	-	-	P	P
Albany	X	X	X	X	-	-	-	-	-	X	X	-	-	-
Allegany	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Bronx (N)														
Broome	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Cattaraugus	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Cayuga	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Chautauqua	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Chemung	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Chenango	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Clinton	X	X	X	X	-	-	-	-	-	X	X	-	-	-
Columbia	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Cortland	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Delaware	P	P	P	-	-	-	-	-	-	P	P	-	P	P
Dutchess	-	-	-	-	-	-	-	-	-	X	X	-	Y	Y
Erie	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Essex	P	P	P	-	-	-	-	-	-	X	X	-	-	-
Franklin	P	P	P	-	-	-	-	-	-	X	X	-	-	-
Fulton	X	X	X	X	-	-	-	-	-	X	X	-	-	-
Genesee	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Greene	-	-	-	-	-	-	-	-	-	X	X	-	-	-
Hamilton	-	-	-	-	-	-	-	-	-	X	X	-	-	-
Herkimer	P	P	P	-	-	-	-	-	-	X	X	-	-	-
Jefferson	P	P	P	P	-	-	-	-	-	P	P	-	P	P
Kings (N)														
Lewis	-	-	-	-	-	-	-	-	-	X	X	-	-	-
Livingston	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Madison	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Monroe	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Montgomery	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Nassau (N)														
New York (N)														
Niagara	X	X	X	-	-	-	-	-	-	X	X	-	-	-

(continued)

Name	Table Number 1	2	3	4	5	6	7	8	9	10	11	12	Urban Est.	Water Est.
Oneida	X	X	X	X	-	-	-	-	-	X	X	-	-	-
Onondaga	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Ontario	-	X	-	-	-	-	-	-	-	X	X	-	Y	Y
Orange	-	-	-	-	-	-	-	-	-	X	X	-	-	-
Orleans	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Oswego	X	X	X	X	-	-	-	-	-	X	X	-	-	-
Otsego	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Putnam (N)														
Queens (N)														
Rensselaer	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Richmond (N)														
Rockland (N)														
St. Lawrence	P	P	P	P	-	-	-	-	-	X	X	-	-	-
Saratoga	X	X	X	X	-	-	-	-	-	X	X	-	-	-
Schenectady	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Schoharie	X	X	X	X	-	-	-	-	-	X	X	-	-	-
Schuyler	-	X	-	X	-	-	-	X	-	X	X	-	Y	O
Seneca	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Steuben	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Suffolk	X	X	X	X	-	-	-	-	-	X	X	-	Y	Y
Sullivan	-	-	-	-	-	-	-	-	-	X	X	-	-	-
Tioga	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Tompkins	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Ulster	-	-	-	-	-	-	-	-	-	X	X	-	-	-
Warren	X	X	X	X	-	-	-	-	-	X	X	-	P	-
Washington	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Wayne	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Westchester (N)														
Wyoming	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Yates	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Pennsylvania	P	P	P	P	P	-	P	-	P	-	-	-	P	P
Adams	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Allegheny	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Armstrong	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Beaver	X	X	X	-	-	-	-	-	-	X	X	-	Y	-
Bedford	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Berks	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Blair	X	X	X	-	-	-	-	-	-	X	X	-	Y	-
Bradford	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Bucks	X	X	X	-	-	-	-	-	-	X	X	-	Y	-
Butler	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Cambria	P	P	P	-	-	-	-	-	-	P	P	-	P	P
Cameron	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Carbon	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Centre	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Chester	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Clarion	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Clearfield	X	X	X	-	-	-	-	-	-	X	X	-	-	Y
Clinton	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y

(continued)

Name	Table Number 1	2	3	4	5	6	7	8	9	10	11	12	Urban Est.	Water Est.
Columbia	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Crawford	X	X	X	-	-	-	-	-	-	X	X	-	-	Y
Cumberland	X	X	X	-	-	-	-	-	-	X	X	-	-	Y
Dauphin	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Delaware	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Elk	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Erie	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Fayette	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Forest	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Franklin	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Fulton	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Greene	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Huntingdon	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Indiana	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Jefferson	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Juniata	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Lackawanna	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Lancaster	X	X	X	-	-	-	-	-	-	X	X	-	Y	O
Lawrence	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Lebanon	X	X	X	-	-	-	-	-	-	X	X	-	-	Y
Lehigh	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Luzerne	X	X	X	-	-	-	-	-	-	X	X	-	-	Y
Lycoming	X	X	X	-	-	-	-	-	-	X	X	-	-	-
McKean	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Mercer	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Mifflin	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Monroe	X	X	X	-	-	-	-	-	-	X	X	-	Y	O
Montgomery	X	X	X	-	-	-	-	-	-	X	X	-	Y	-
Montour	X	X	X	-	-	-	-	-	-	X	X	-	Y	O
Northampton	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Northumberland	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Perry	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Philadelphia (N)														
Pike	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Potter	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Schuylkill	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Snyder	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Somerset	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Sullivan	X	X	X	-	-	-	-	-	-	X	X	-	-	Y
Susquehanna	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Tioga	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Union	X	X	X	-	-	-	-	-	-	X	X	-	Y	O
Venango	X	X	X	-	-	-	-	-	-	X	X	-	-	-
Warren	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Washington	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Wayne	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Westmoreland	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Wyoming	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
York	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y

(continued)

Name	Table Number 1	2	3	4	5	6	7	8	9	10	11	12	Urban Est.	Water Est.
Rhode Island	X	X	X	X	X	-	X	-	X	-	-	-	Y	Y
Bristol	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Kent	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Newport	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Providence	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Washington	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Vermont	X	X	X	X	X	-	X	-	X	-	-	-	Y	Y
Addison	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Bennington	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Caledonia	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Chittenden	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Essex	X	-	X	-	-	-	-	-	-	X	X	-	Y	O
Franklin	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Grand Isle	-	-	-	-	-	-	-	-	-	M	M	-	O	M
Lamoille	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Orange	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Orleans	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Rutland	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Washington	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Windham	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Windsor	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
White River SCD	X	X	X	-	-	-	-	-	-	-	-	-	Y	Y
Virginia	P	P	P	P	P	-	P	-	P	-	-	-	-	Y
Accomac	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Albemarle	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Alleghany	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Amelia	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Amherst	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Appomattox	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Arlington (N)														
Augusta	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Bath	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Bedford	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Bland	X	X	X	X	X	-	-	-	-	X	X	X	-	O
Botetourt	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Brunswick	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Buchanan	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Buckingham	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Campbell	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Caroline	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Carroll	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Charles City	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Charlotte	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Chesterfield	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Clarke	X	X	X	X	-	-	X	-	-	X	X	-	-	O
Craig	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Culpeper	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Cumberland	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Dickenson	X	X	X	X	X	-	-	-	-	X	X	X	-	O

(continued)

Name	Table Number 1	2	3	4	5	6	7	8	9	10	11	12	Urban Est.	Water Est.
Dinwiddie	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Hampton City	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Essex	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Fairfax	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Fauquier	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Floyd	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Fluvanna	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Franklin	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Frederick	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Giles	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Gloucester	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Goochland	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Grayson	X	X	X	X	X	-	-	-	-	X	X	X	-	Y
Greene	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Greensville	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Halifax	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Hanover	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Henrico	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Henry	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Highland	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Isle of Wight	X	X	X	X	X	-	-	-	-	X	X	-	-	0
James City	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
King and Queen	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
King George	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
King William	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Lancaster	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Lee	X	X	X	X	X	-	-	-	-	X	X	X	-	Y
Loudoun	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Louisa	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Lunenburg	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Madison	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Mathews	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Mecklenburg	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Middlesex	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Montgomery	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Nansemond	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Nelson	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
New Kent	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Norfolk	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Northampton	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Northumberland	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Nottoway	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Orange	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Page	X	X	X	X	-	-	X	-	-	X	X	-	-	Y
Patrick	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Pittsylvania	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Powhatan	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Prince Edward	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Prince George	X	X	X	X	X	-	-	-	-	X	X	-	-	0
Princess Anne	X	X	X	X	X	-	-	-	-	X	X	-	-	Y

(continued)

Name	Table Number 1	2	3	4	5	6	7	8	9	10	11	12	Urban Est.	Water Est.
Prince William	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Pulaski	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Rappahannock	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Richmond	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Roanoke	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Rockbridge	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Rockingham	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Russell	X	X	X	X	X	-	-	-	-	X	X	X	-	Y
Scott	X	X	X	X	X	-	-	-	-	X	X	X	-	Y
Shenandoah	X	X	X	X	-	-	X	-	-	X	X	-	-	Y
Smyth	X	X	X	X	X	-	-	-	-	X	X	X	-	Y
Southampton	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Spotsylvania	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Stafford	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Surry	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Sussex	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Tazewell	X	X	X	X	X	-	-	-	-	X	X	X	-	Y
Warren	X	X	X	X	-	-	X	-	-	X	X	-	-	O
Warwick	X	X	X	X	X	-	-	-	-	X	X	-	-	O
Washington	X	X	X	X	X	-	-	-	-	X	X	X	-	Y
Westmoreland	X	X	X	X	X	-	-	-	-	X	X	-	-	Y
Wise	X	X	X	X	X	-	-	-	-	X	X	X	-	O
Wythe	X	X	X	X	X	-	-	-	-	X	X	X	-	Y
York	X	X	X	X	X	-	-	-	-	X	X	-	-	O
West Virginia	-	-	-	-	-	-	-	-	P	-	-	-	P	P
Barbour*	X	X	X	-	-	-	-	-	-	X	X	-	Y	O
Berkeley	-	M	-	-	-	-	-	-	-	M	M	-	M	O
Boone	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Braxton	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Brooke*	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Cabell	-	X	-	-	-	-	-	-	-	X	X	-	Y	Y
Calhoun	X	X	X	-	-	-	-	-	-	X	X	-	O	Y
Clay	X	X	X	-	-	-	-	-	-	X	X	-	O	O
Doddridge	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Fayette	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Gilmer	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Grant	-	M	-	-	-	-	-	-	-	M	M	-	M	M
Greenbrier	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Hampshire	-	M	-	-	-	-	-	-	-	X	X	-	Y	-
Hancock	-	-	-	-	-	-	-	-	-	M	M	-	M	M
Hardy	X	X	X	-	-	-	-	-	-	X	X	-	O	Y
Harrison	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Jackson	-	-	-	-	-	-	-	-	-	M	M	-	O	M
Jefferson	-	M	-	-	-	-	-	-	-	M	M	-	M	O
Kanawha	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Lewis	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Lincoln	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Logan	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
McDowell	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Marion	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y

(continued)

Name	Table Number 1	2	3	4	5	6	7	8	9	10	11	12	Urban Est.	Water Est.
Marshall	-	-	-	-	-	-	-	-	-	M	M	-	O	M
Mason	-	-	-	-	-	-	-	-	-	M	M	-	M	M
Mercer	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Mineral	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Mingo	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Monongalia	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Monroe	X	X	X	-	-	-	-	-	-	X	X	-	O	Y
Morgan	-	M	-	-	-	-	-	-	-	M	M	-	M	M
Nicholas	X	X	X	-	-	-	-	-	-	X	X	-	O	Y
Ohio	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Pendleton	-	M	-	-	-	-	-	-	-	M	M	-	M	M
Pleasants	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Pocahontas	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Preston	-	-	-	-	-	-	-	-	-	M	M	-	M	M
Putnam	X	X	X	-	-	-	-	-	-	X	X	-	O	Y
Raleigh	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Randolph	X	X	X	-	-	-	-	-	-	X	X	-	-	Y
Ritchie	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Roane	X	X	X	-	-	-	-	-	-	X	X	-	O	Y
Summers	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Taylor	-	M	-	-	-	-	-	-	-	M	M	-	M	M
Tucker	X	X	X	-	-	-	-	-	-	X	X	-	O	Y
Tyler	X	X	X	-	-	-	-	-	-	X	X	-	O	Y
Upshur	X	X	X	-	-	-	-	-	-	X	X	-	-	Y
Wayne	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Webster	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Wetzel	X	X	X	-	-	-	-	-	-	X	X	-	Y	O
Wirt	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Wood	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y
Wyoming	X	X	X	-	-	-	-	-	-	X	X	-	Y	Y

* Estimates for these areas contain some completely measured data and some sample data.

** Estimates for the Southeastern Coastal Region in New Jersey were originally computed using a single expansion ratio for each land resource unit in the region and dividing the results proportionately among the counties. New ratios have been computed on a land resource unit within-a-county basis, and all future tables will be printed using the new estimates.

Potomac River Basin Study

Name	Table Number 1	2	4	6	7
Physio-Economic Region I	X	X	-	-	-
Economic Area I-A	X	X	X	-	X
Potomac Area of Prince George's Co., Maryland	-	-	-	X	-
Economic Area I-B	X	X	X	-	X
Potomac Area of Charles Co., Maryland	-	-	-	X	-
Economic Area I-C	X	X	X	-	X
Potomac Area of St. Mary's Co., Maryland	-	-	-	X	-
Potomac Area of King George Co., Virginia	-	-	-	X	-
Potomac Area of Northumberland Co., Virginia	-	-	-	X	-
Potomac Area of Westmoreland Co., Virginia	-	-	-	X	-
Physio-Economic Region II	X	X	-	-	-
Economic Area II-A	X	X	X	-	X
Potomac Area of Carroll Co., Maryland	-	-	-	X	-
Frederick County, Maryland	-	-	-	X	-
Potomac Area of Adams Co., Pennsylvania	-	-	-	X	-
Potomac Area of Fauquier Co., Virginia	-	-	-	X	-
Loudoun County, Virginia	-	-	-	X	-
Prince William County, Virginia	-	-	-	X	-
Potomac Area of Stafford Co., Virginia	-	-	-	X	-
Economic Area II-B	X	X	X	-	X
Potomac Area of Montgomery Co., Maryland	-	-	-	X	-
Fairfax County, Virginia	-	-	-	X	-
Physio-Economic Region III	X	X	-	-	-
Economic Area III-A	X	X	X	-	X
Washington County, Maryland	-	-	-	X	-
Potomac Area of Franklin Co., Pennsylvania	-	-	-	X	-
Economic Area III-B	X	X	X	-	X
Frederick County, Virginia	-	-	-	X	-
Berkeley County, West Virginia (measured)	X	-	-	-	-
Berkeley County, West Virginia (estimated)	-	X	-	-	-
Economic Area III-C	X	X	X	-	X
Potomac Area of Augusta Co., Virginia	-	-	-	X	-
Clarke County, Virginia	-	-	-	X	-
Page County, Virginia	-	-	-	X	-
Rockingham County, Virginia	-	-	-	X	-
Shenandoah County, Virginia	-	-	-	X	-
Warren County, Virginia	-	-	-	X	-
Jefferson County, West Virginia (measured)	X	-	-	-	-
Jefferson County, West Virginia (estimated)	-	X	-	-	-
Physio-Economic Region IV	X	X	-	-	-
Economic Area IV-A	X	X	X	-	X
Allegany County, Maryland	-	-	-	X	-
Potomac Area of Bedford Co., Pennsylvania	-	-	-	X	-
Potomac Area of Fulton Co., Pennsylvania	-	-	-	X	-
Mineral County, West Virginia	-	-	-	X	-
Economic Area IV-B	X	X	-	-	-
Highland Co., Virginia and Hardy Co., West Virginia	-	-	X	-	X
Highland County, Virginia	-	-	-	X	-

(continued)

Name	Table Number 1	2	4	6	7
Grant County, West Virginia (measured)	X	-	-	-	-
Grant County, West Virginia (estimated)	-	X	-	-	-
Hampshire County, West Virginia (measured)	X	-	-	-	-
Hampshire County, West Virginia (estimated)	-	X	-	-	-
Hardy County, West Virginia	-	-	-	X	-
Morgan County, West Virginia (measured)	X	-	-	-	-
Morgan County, West Virginia (estimated)	-	X	-	-	-
Pendleton County, West Virginia (measured)	X	-	-	-	-
Pendleton County, West Virginia (estimated)	-	X	-	-	-
Physio-Economic Region V	X	X	X	-	X
Garrett County, Maryland	-	-	-	X	-
Somerset County, Pennsylvania	-	-	-	X	-